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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/837,228

04/19/2001

James B. Popp

2100.0071-00

7579

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11/15/2006

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EXAMINER

LEE, BENJAMIN C

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/837,228  
Filing Date: April 19, 2001  
Appellant(s): POPP ET AL.

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Christopher T. Kent  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 10/2/06 appealing from the Office action mailed 3/21/06.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,058,167	Granek et al.	11-1977
WO93/12839	Powell et al.	7-1993
3,909,814	Eguchi	9-1975

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4,987,958	Fierbaugh	1-1991
6,032,745	Sears	3-2000
3,848,231	Wootton	11-1974
5,880,867	Ronald	3-1999 (in Remarks only)

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Status***

Claims 1-26 and 41-61 are pending. Claim 52 is a redundancy of claim 18. Claims 41-42 and 59 are allowed. Claims 1-26, 43-58 and 60-61 are rejected as follows:

***Claim Rejections - 35 USC § 103***

**Claims 1-8, 18-23, 43-49, 52-55 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. (US 4,058,167) in view of Powell et al. (WO93/12839).**

1) Regarding claim 1: Granek et al. discloses a system for detecting and suppressing a fire condition in a storage unit (compartment or room in Fig. 1 capable of storage) for storing objects in a storage area containing a plurality of storage units (facility/complex as a whole shown in Fig. 1), the system comprising: a transmitter (16 and col. 4, lines 30-36) associated with each of at least some of the plurality of the storage units and configured to transmit a first signal upon detection of a fire condition in a storage unit experiencing the fire condition; at least one receiver (48 and col. 4, lines 37-40) configured to detect the first signal and configured to provide a second signal (warning light 51 and audible warning device of col. 4, lines 43-50) indicating detection of the fire condition in the storage unit experiencing the fire condition; and a

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plurality of fire suppression devices (14), each of the fire suppression devices being associated with a storage unit (Fig. 1) and being configured to discharge a fire suppressant material into its associated storage unit upon detection of the fire condition in its associated storage unit, wherein detection of the fire condition in any one of the plurality of storage units does not necessarily result in discharging of fire suppressant material into others of the plurality of storage units (col. 4, lines 50-52 and col. 5, lines 4-19); except specifying that the stored objects are freight.

The claimed invention recited in the preamble that the storage units are “for storing freight” as an intended use. While Granek et al. discloses the intended application of the fire detection/extinguishing system to rooms in a building, small or medium-sized premises such as residential apartments and office premises (col. 1, lines 5-15), Powell et al. teaches the known intended application of a fire detection/extinguishing system to an aircraft cargo (freight) bay (storage area) (Figs. 1-2 and Abstract). In view of the teachings by Granek et al. and Powell et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to apply the storage-units fire detection/extinguishing system of Granek et al. to a cargo storage area for storing freight such as taught by Powell et al. as a known intended use.

2) Regarding claim 2, Granek et al. and Powell et al. render all of the claimed subject matter obvious as in claim 1, including:

a) the claimed plurality of storage units (Fig. 1 of Granek et al.), plurality of transmitters (16 in Fig. 1 of Granek et al.) each associated with a storage unit;

except:

b) the claimed plurality of receivers each associated with a storage unit.

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While Granek et al. teaches a single receiver 48 having decoder that associated each of the transmitters and storage units in a distinguishable manner through use of encoded transmitter first signals or first signals having different frequencies (Fig. 5; col. 4, lines 34-50 and col. 4, line 62 to col. 5, line 19), it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a corresponding plurality of receivers for the plurality of transmitters as an alternative to provide the same function of distinguishing the plural transmitted first signals from each other, whereby the latter alternative can be chosen base on trivial factors such as availability of the type of receivers at hand at the time of implementation.

3) Regarding claim 3, Granek et al. and Powell et al. render all of the claimed subject matter obvious as in claim 2, wherein:

--the claimed each of the storage units is located at a predetermined position relative to the individual receiver associated with the storage unit is met by the fixed positions, and therefore relative positions, of the storage units and individual receiver as shown in Fig. 5 of Granek et al.

4) Regarding claim 4, Granek et al. and Powell et al. render all of the claimed subject matter obvious as in claim 3, except:

--the claimed wherein the second signal from a receiver is provided to a control panel that in response to the second signal identifies the storage unit experiencing the fire condition.

Granek et al. discloses that the receiver 48 is located at a control panel (55) that in response to the transmitted first signal identifies the storage unit experiencing the fire condition (Fig. 5; col. 4, lines 34-50 and col. 4, line 62 to col. 5, line 19). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use one or more relay

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transceivers, either hard-wired or wireless, for receiving the first signals and transmitting second signals to the control panel for identification in a system such as taught by Granek et al. and Powell et al. for application environments in which direct signal transmission is not feasible but requires relaying/retransmission in order to communicate between the storage unit transmitters and the control panel, such as due to physical or signal obstructions/interference.

5) Regarding claims 5-6, Granek et al. and Powell et al. render all of the claimed subject matter obvious as in claim 2, except:

--specifying the claimed at least some of the storage units are containers or pallets including blankets for storing the freight.

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that since freight storage units including containers or pallets including blankets for storing freight are also subjected to tire hazards, a system such as taught by Granek et al. and Powell et al. is applicable for protecting such storage units against fire hazards just as well as an intended use within the scope of the invention of the combined teachings.

6) Regarding claims 7, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 1, including:

--the claimed pressurized vessel within the storage unit and containing fire suppressant material activated and discharged by a fire detection component into the storage unit upon fire detection is met by Figs. 1-5 of Granek et al.

7) Regarding claim 8, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 1, except

--the claimed first signal is infrared.

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While Granek teaches using ultrasonic or radio frequency signals, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that other wireless links, including an infrared link, can be used in a system such as taught by Granek et al. and Powell et al. without unexpected results, whereby infrared can specifically be chosen if radio or ultrasonic interference may be a potential problem in the application environment.

8) Regarding claims 18-19, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in the consideration of claim 8, wherein:

Since Powell et al. teaches the protection of aircraft cargo/freight, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to place the remote alarm and control panel in the aircraft cockpit where personnel is expected to be, and is applicable to aircraft cargo/freight in the configuration of a plurality of storage units in the storage area for a system such as taught by Granek et al. and Powell et al.

9) Regarding claims 20-22, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 19, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that for relatively small storage units such as containers as an intended use of the system taught by Granek et al. and Powell et al., in order that the storage volume is not negatively impacted/reduced by being occupied by the fire suppressant and release components, they can be configured in a retractable configuration and located exterior of the container such as outside the base of the container with a hole so that the application mechanism and valve aligned with the hole will discharge fire suppressant material into the container through the hole



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responsive to fire detection, and to configure the valve in a retracted position prior to tire detection, but then engage the container base upon the fire detection using a piston.

10) Regarding claim 23, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 18, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the cargo storage units in a system such as taught by Granek et al. and Powell et al. can include a pallet, and to include a fire resistant blanket for the storage unit housing/walls including its base to improve tire survivability, since fire hazard is a concern for the storage unit in a system such as taught by Granek et al. and Powell et al. by virtue of the need to implement the fire detection and suppressant system.

11) Regarding claim 43, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in the consideration of claim 8.

12) Regarding claims 44-49, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 43, plus the consideration of claims 2-7, respectively.

13) Regarding claim 52, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in the consideration of claim 18.

14) Regarding claim 53, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 52, plus the suppressant system shown in Figs. 1 & 5 of Granek et al. including the claimed application mechanism (valve 47) in the manner claimed.

15) Regarding claim 54, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 53, plus the consideration of claim 20.

16) Regarding claim 55, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 52, plus the consideration of claim 23.

17) Regarding claims 60-61, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in the consideration of claims 1 and 4, respectively.

**Claims 9 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. in view of Powell et al. and Eguchi (US pat. #3,909,814).**

1) Regarding claim 9, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 1, while:

Eguchi teaches a bimetallic switch configured to close upon detection of the fire condition as a specific, known fire detector (Figs. 1-3). In view of the teachings by Granek et al., Powell et al. and Eguchi, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the fire detector of Granek et al. and Powell et al. using a known specific sensor such as the bimetallic switch taught by Eguchi.

2) Regarding claim 50, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 43, plus the consideration of claim 9 further in view of Eguchi.

**Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. in view of Powell et al., Eguchi and Fierbaugh (US pat. #4,987,958).**

1) Regarding claims 10-11, Granek et al., Powell et al. and Eguchi made obvious all of the claimed subject matter as in claim 9, while:

Fierbaugh teaches a known mounting of a bimetallic switch sensor in a container environment in which the switch extends through and contacts a surface of the container (21 in Figs. 1 & 3). It would have been obvious to one of ordinary skill in the art at the time of the

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claimed invention that when applying the fire sensing bimetallic switch of a system such as taught by Granek et al., Powell et al. and Eguchi to the storage unit environment, that the switch needs to be physically mounted somewhere, and the sensor has to be operably coupled to the environment, such as by extending through and in contact with a surface of the storage unit, especially if the storage unit is relatively small. Furthermore, Fierbaugh teaches such known mounting as a known way for mounting the bimetallic switch sensor to a container environment.

2) Regarding claims 12-13, Granek et al., Powell et al., Eguchi and Fierbaugh render obvious all of the claimed subject matter as in claim 11, wherein:

Since fire hazard is a concern for the storage unit in a system such as taught by Granek et al., Powell et al, Eguchi and Fierbaugh by virtue of the need to implement the fire detection and suppressant system, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include a cover and/or a fire resistant blanket for the storage unit housing/wall so that said surface is the cover or blanket.

**Claims 14-17 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. in view of Powell et al. and Sears (US pat. #6,032,745).**

1) Regarding claim 14, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 2, while:

Sears teaches a popup device disposed between one of the application environment and the source of pressurized fire suppressant material to apply the material upon a fire condition (24 and col. 4, lines 22-38). While Granek et al. uses a valve 47, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that a known popup device and

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valve mechanism such as taught by Sears can also be used as an alternative for such a purpose, the choice depending on factors such as availability of parts at the time of implementation.

2) Regarding claim 15, Granek et al., Powell et al. and Sears made obvious all of the claimed subject matter as in claim 14, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that for relatively small storage units such as containers as an application environment of the system taught by Granek et al., Powell et al. and Sears, in order that the storage volume is not negatively impacted/reduced by being occupied by the fire suppressant and release components, they can be located exterior of the container such as outside the base of the container with a hole so that the popup device and valve aligned with the hole will discharge fire suppressant material into the container through the hole responsive to fire detection.

3) Regarding claim 16, Granek et al., Powell et al and Sears made obvious all of the claimed subject matter as in claim 14, wherein:

Granek et al. teaches a control unit 55 configured to transmit an activation signal to the valve mechanism 47 upon detecting the first signal for dispensing fire extinguishing material (Figs. 1 and 5), so that it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that such activation signal in Granek et al., Powell et al and Sears would also activate the popup device in order for the fire extinguishing to commence.

Furthermore, Granek et al. discloses that the receiver 48 is located at a control unit (55) that in response to the transmitted first signal identifies the storage unit experiencing the fire condition (Fig. 5; col. 4, lines 34-50 and col. 4, line 62 to col. 5, line 19). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use one or more

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relay transceivers for receiving the first signals and transmitting second signals to the control unit for identification in a system such as taught by Granek et al., Powell et al. and Sears for application environments in which direct signal transmission is not feasible but requires relaying/retransmission in order to communicate between the storage unit transmitters and the control unit, such as due to physical or signal obstructions/interference, so that the signal detected by the control unit is the second signal.

4) Regarding claim 17, Granek et al., Powell et al. and Sears made obvious all of the claimed subject matter as in claim 16, including:

--the claimed control panel having a warning indicator wherein the control unit transmits an alert signal to the warning indicator on the panel (51 in Fig. 5 of Granek et al.).

5) Regarding claim 51, Granek et al., Powell et al. render obvious all of the claimed subject matter as in claim 44, plus the consideration of claim 14 in view of Sears.

**Claims 24-26 and 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. in view of Powell et al. and Wootton (US 3,848,231).**

1) Regarding claims 24-25, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 18, while:

Wootton (Figs. 1 and 4) teaches the desirability to provide a remote indication of a detected fire condition ("DETECTORS", "FIRE" of Fig. 1) for situational awareness by personnel for appropriate action, in which the control unit determines origin of fire detection signal and transmits another signal (indicator signal) to a control panel (display 235) indicating origin of the transmitted fire detection signal (col. 17, lines 33-38).

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It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include an origin-indication feature such as taught by Wootton in a fire detection, suppression and indication system such as taught by Granek et al. and Powell et al. for improved situational awareness by personnel for timely appropriate action.

2) Regarding claim 26, Granek et al., Powell et al. and Wootton render obvious all of the claimed subject matter as in claim 25, including:

--the claimed wherein the control unit transmits a fourth signal to the fire suppression device to discharge the fire suppressant material into the storage unit (Figs. 1 and 5; col. 4, lines 50-53 and col. 5, lines 4-19 of Granek et al.)

3) Regarding claims 56-58, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 52, plus the consideration of claims 24-26 further in view of Wootton.

#### **(10) Response to Argument**

1) Regarding the rejection of claims 1, 18, 43, 52 and 60 under USC 103(a) based on Granek et al. in view of Powell et al., Granek et al. teaches a fire detection and extinguishing system applied to a premise/facility having a plurality of compartments, which inherently have the ability to store objects including freight, wherein fire sensors and extinguisher nozzles are individually placed to coincide with a respective compartment so that fire extinguisher fluid is selectively discharged into compartment(s) that experienced fire hazard (Summary Of The Invention).

As indicated in the rejection, the application or mounting of a fire detection and extinguishing system of Granek et al. to a container in an overall storage area instead of a

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room/compartment in an overall storage area/facility as the application environment constitutes merely an intended use of the Granek et al. system, and since there exists a one-to-one correspondence/analogy of the “container-in-a-storage area” versus “room/compartment-in-a-facility that can store objects including freight” application scenario, one skilled in the art would have readily recognized such intended use as being obvious and therefore would have applied such a known prior art system of Granek et al. to a freight container in a storage area as an intended use, especially since secondary prior art of Powell et al. discloses known fire detection and suppression for freight storage area such as in an aircraft cargo hold.

**It is noted that “intended use” in this examination history is used in the context of 35 USC 103(a) obviousness rejection, as in one skilled in the art would have recognized that a prior art teaching of Granek et al. can also be applied to a similar/analogous intended application environment/use, with further supporting evidence/logic and explanation including use of secondary prior art of Powell et al., as opposed to the “intended use” treatment in 35 USC 102 anticipation rejections.**

One skilled in the art would have readily recognized that building facilities and aircraft cargo hold environments are but storage environments where fire can and do occur to damage the environment as well as the objects/cargo/freight stored therein so that they all can benefit from the fire detection and suppression system.

For example, an owner of an aircraft having a cargo hold with multiple compartments or containers for transporting freight who is aware of the Granek et al. and Powell et al. teachings would recognize the need and benefit of fire detection and suppression there as per the teaching of Powell et al., and to therefore utilize a known fire detection and suppression system such as

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taught by Granek et al. to protect the compartments/containers in the cargo hold because of the selective fire detection and extinguishing features for the individual compartments/containers provided by Granek et al.

Therefore, proper motivation and suggestion to combine Granek et al. and Powell et al. have been used in the rejection.

Regarding Appellant's argument that the combination of Granek et al. and Powell et al. does not meet every claimed limitation including the claimed "storage units", the "storage compartments" of Granek et al. when viewed in the aircraft cargo hold of Powell et al. constitutes cargo/freight compartments which meets the claimed "storage units". Note that an aircraft cargo area may have a single or multiple compartments. "Storage units" are interpreted, reasonably, as "individual units capable of or for storage of objects/items", which encompass "storage compartments". The storage compartments/rooms in Granek et al. that are for or capable of storing objects/items furthermore constitute "storage containers" as claimed in claim 18. The combination of Granek et al. and Powell et al. was made under the rationale that it would have been obvious to one skilled in the art to apply the system of Granek et al. in an aircraft cargo/freight storage area as an intended usage as suggested by Powell et al. Therefore, the combined system establishes applying the fire detection and extinguishing features in the "aircraft environment", whereby one skilled in the art would have readily recognized that radio signals constitute a source of interference in an aircraft environment where sensitive communication and electronic equipment are operating and which are prone to interference from noise sources such as radio signals, while signals such as infrared signals do not pose such interference. (US 5,880,867 to Ronald was used as factual evidence in the Remarks section of



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the Final Office action mailed 3/21/06 upon Appellant's request). Once substituting radio signals for infrared signals in the combined system of Granek et al. and Powell et al. as already established, the result is the claimed system. Here, Appellant apparently is analyzing the prior art references individually and alleging that none of the prior art alone, instead of in combination, suggests or meets particular claimed limitations.

Appellant recited that the claimed system "solves a long-felt need", but without specifying what it is, and without submitting it in Affidavit/Declaration format.

2) Arguments directed to claims 9-17, 24-26, 43, 50-52, 56-58 and 60 are based on the same grounds as provided above and thus are similarly rebutted.


3) No additional arguments are made for the rejection of claims 2-8, 19-23, 44-49, 53-55 and 61, and thus the rejection is maintained.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.


For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

  
**BENJAMIN C. LEE**  
**PRIMARY EXAMINER**

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